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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,971	09/05/2003	Takayuki Araki	Q77316	5657
23373	7590	05/24/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			HU, HENRY S	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/654,971

Applicant(s)

ARAKI ET AL.

Examiner

Henry S. Hu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment of April 13, 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 11-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-22 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to **Amendment** filed on April 13, 2006. No claim was amended, cancelled or added. As discussed earlier, the Applicants have elected **without traverse on Claims 1-8** (generic claims in Group I) along with **Claims 9 and 10** by electing **Species (6) for a = 1-3; b = 0, c = 1 (Claims 1-10 are thereby elected)**. The examiner **accepts Applicants' drawing in one sheets with one figure** filed on September 5, 2003 along with this application (BD is on page 8). **Claims 1-22 are now pending** with one independent claim (Claim 1), while Claims 11-22 are still withdrawn from consideration. An action follows.

Response to Argument

2. In view of the Applicants' argument on pages **3-6** of Remarks with no scope of claim limitation being changed, **both 102 and 103 rejections are sustained**.

In responding to Applicants' argument on pages **2-3** regarding the use of a cure site, the Examiner **withdraws ODP rejection** since even in the case that a cure cite is to be used, both the type of cure site and the claimed cure site with Rf which is defined in Claim 29 of "888" as having 1 to 5 carbonyl groups will not be obvious to one having ordinary skill in the art.

Claim Rejections - 35 USC § 102

Art Unit: 1713

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. *The limitation of parent Claim 1 in present invention relates to a fluorine-containing resin composition comprising (I) a fluorine-containing prepolymer and (II) a compound containing a rare earth metal ion and/or a rare earth metal element, wherein (1) the fluorine-*

Art Unit: 1713

containing prepolymer (I) is a **non-crystalline polymer having a fluorine content of not less than 25 % by weight** and (2) the fluorine-containing prepolymer (I) has a **cure site in a side chain of the polymer and/or at an end of a trunk chain of the polymer.** The fluorine-containing polymer described in dependent **Claim 8** has a structural unit from $CX^1X^2=CX^3-(CX^4X^5)_a-(C=O)_b-(O)_c-Rf$ wherein the factors of X^1 and X^2 can be the same or different from H or F; X^3 is H, F, CH_3 or CF_3 ; X^4 and X^5 can be the same or different from H, F or CF_3 ; **Rf can be organic group (Y)-containing alkylene or alkylene ether; and a is integer of 0-3, while b and c can be 0 or 1.** Claims 9 and 10 are pending now since Species (6) for $a = 1-3$; $b = 0$, $c = 1$ is elected. See other limitations of dependent **Claims 2-8 and 9-10.**

6. Claims 1-7 are rejected under 35 U.S.C. 102(a) as being anticipated by Koike et al. (EP 1,072,905 A1) for the reasons set forth in paragraphs **6-7** of office action dated 1-13-2006 as well as the discussion below.

7. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fryd et al. (US 6,869,693 B2 with an effective US filing date of **October 10, 2000** or its equivalent EP WO 02/31896 A2) in view of Koike et al. (EP 1,072,905 A1) for the reasons set forth in paragraphs **9-11** of office action dated 1-13-2006 as well as the discussion below.

8. **Applicants:** Applicants have claimed on parent **Claim 1** an unexpected way of obtaining a fluorine-containing resin composition comprising two things as: (I) **a fluorine-containing “prepolymer”** and (II) **a compound containing a rare earth metal ion and/or a**

Art Unit: 1713

rare earth metal element. The key point is that such a fluorinated prepolymer is required as: **(A) being non-crystalline, (B) having a fluorine content of not less than 25 wt %, and (C) having a cure site.**

Both 102(a) and 103(a) rejections relying the use of Koike and/or Fryd as reference cannot stand as follows: Regarding 102(a) rejection, **Koike** may only disclose non-crystallinity is existed on fluoropolymer but does not disclose a cure-site anywhere in polymer at all (see page 4 top section of Remarks). Therefore, Koike's composition is not curable.

9. With respect to 103(a) rejection, the primary reference **Fryd** is totally relying on secondary reference Koike's teaching to make a composition for making a light transmitting device prepared by mixing a **non-crystalline perfluoropolymer** containing no C-H bond with a fluorinated metal-betadecarbonyl chelate compound. However, Koike may only be related to a quite different subject matter since Koike only discloses dispersing chelate compound into fluoropolymer (which has no cure site at all) (see page 5 bottom of Remarks). Therefore, Koike does not disclose or suggest **the curing** of a composition comprising a non-crystalline fluoropolymer and chelate compound. In summary, a motivation to link Koike with Fryd is missing.

10. **Examiner:** Parent **Claim 1** is involved the use of cure site in polymer so as to make curable and/or crosslinkable composition for optical application. In view of Applicants'

Art Unit: 1713

arguments, the Examiner fully understands current focus is on the cure site on Kolbe's fluoropolymer.

Attention is directed to the fact that parent Claim 1 only requires to have "a cure site" on the fluoropolymer, it does not specify two things as: (A) the type of cure site, and (B) the amount of cure site. It is noted that many different cure sites are known in the art; each type may carry different reactivity. Actually, each cure site in the same type may be different as well. Practically, any functional group can be useful as cure site as long as it can react with the components inside the composition when cured. It is noted that in the course of polymerization, many types of functional groups can be routinely generated as end groups on the polymer chain if special capping procedure is not applied in the end of polymerization. Such end functional groups can be either stable or unstable.

11. As discussed earlier, Koike's fluorinated co-polymers may easily carry three different types of cure site from: (A) end functional groups from polymerization, (B) pendant functional groups from the co-monomer(s) used to prepare copolymer, and (C) residual carbon-carbon double bond from starting monomer(s), which are all capable of crosslinking. Therefore, the 102(a) rejection of parent Claim 1 by Koike is sustained.

Attention is directed to the other fact that both references are dealing with making fluorinated compositions including a mixture of fluoropolymer and metal chelate for optical emission, transmission and application. For instance, see "693" on title, and column 1, line 18-

Art Unit: 1713

48; see “905” on title and paragraphs 0002 and 0003. As discussed above, the issue of Koike’s curability will render a motivation to link Koike with Fryd in the 103(a) rejection for “using a non-crystalline fluorinated prepolymer or precopolymer with a fluorine content of not less than 25 wt%”.

12. Therefore, one having ordinary skill in the art would have found it obvious to modify Fryd’s **pre-polymeric composition** by using **an ether-type fluoropolymer (preferably to be a perfluoropolymer) carrying a fluorinated metal chelate as a moiety inside the polymer’s pendant group** as taught by Koike. By this modification, one would expect to obtain a better and more diversified fluorinated copolymer with improved optical transparent properties to be excellent in reducing transmission loss when using a near infrared light and with better solubility and/or compatibility. In conclusion, both 102(a) and 103(a) rejections are sustained with the same ground of rejection.

Conclusion

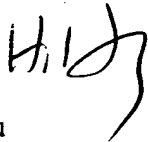
13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 1713

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

May 18, 2006



DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700